

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 3. This sheet, which includes Fig. 3, replaces the original sheet including Fig. 3.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion is respectfully requested.

Claims 15-28 are pending in the application, with Claims 25-28 amended and Claims 29-33 added by the present amendment.

In the Official Action, the Abstract was objected to; the drawings were objected to; Claims 15 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kochiyama (U.S. Patent No. 5,400,036); and Claims 16-23 and 25-28 were indicated as containing allowable subject matter.

Applicants acknowledge with appreciation the indication of allowable subject matter.

The Abstract and drawings are amended as requested in the Official Action. The specification and claims are amended to correct a translation error. For the Examiner's convenience, the paragraph amended is the original paragraph published by the USPTO with mathematical expressions converted for machine reading. If the Examiner desires, Applicants will gladly resubmit the present amendment to the specification in another form. The claims are further amended to correct antecedent basis. New Claims 29-33 are apparatus claims corresponding to means-plus-function Claims 24-28. No new matter is added.

Briefly recapitulating, Claim 15 is directed to a method of estimating a channel and a direction of arrival of a signal received by an array of antennae after being propagated along at least one path. The method includes, for each path, a first step of estimating for each antennae in the array a total phase difference from a signal received by each antennae. The method also includes the step of estimating the angle of arrival of the signal, as well as a phase rotation undergone by the signal along the at least one path, using each of the antennae total phase differences determined in the first step. The method also includes a third step of estimating an attenuation undergone by the signal along the at least one path from estimated

values of the phase rotation and the angle of arrival. Claim 24 is directed to a signal reception device substantially corresponding to the method recited in Claim 15.

Kochiyama describes an energy transmission arrangement that emits a microwave energy signal to a target location on the basis of a pilot signal received from the target location.¹ Kochiyama further describes a method for calculating a phase shift relative to a difference in operation between an antenna L and a reference antenna 1 corresponding to an angle of arrival.² However, contrary to the Official Action, Kochiyama does not disclose or suggest Applicant's claimed step of estimating a phase rotation. The Official Action points to Figure 1 of Kochiyama for a teaching of a phase difference between antennas. Applicants submit this phase difference is not equivalent to Applicant's claimed phase rotation.

MPEP §706.02(j) notes that to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Also, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Without addressing the first two prongs of the test of obviousness, Applicants submit that the Official Action does not present a *prima facie* case of obviousness because Kochiyama fails to disclose all the features of Applicants' claimed invention.

Furthermore, as acknowledged in the Official Action, Kochiyama does not disclose or suggest Applicant's claimed step of estimating the attenuation undergone by the signal along

¹ Kochiyama, abstract.

² Kochiyama, column 6, lines 5-65.

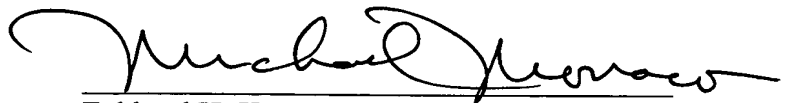
the said path from the previously estimated values. Nonetheless, the Official Action rejects Claims 15 and 24 with an assertion that it would have been obvious to estimate the attenuation undergone by the signal along the said path from the previously estimated values. Because the Official Action does not provide any reference that teaches estimating the attenuation undergone by the signal along the said path from the previously estimated values, Applicants interpret the Official Action's assertion of obviousness as being based on Official Notice.

The Examiner may take official notice of facts outside of the record which are capable of instant and unquestionable demonstration as being "well-known" in the art.³ However, as set forth in M.P.E.P. § 2144.03, if an applicant traverses an assertion made by an Examiner while taking official notice, the Examiner should cite a reference in support of their assertion. Applicants respectfully traverse those grounds for rejection relying on Official Notice. Applicants do not consider the features for which Official Notice were taken to be "of such notorious character that official notice can be taken."

Accordingly, in view of the previous discussion and in view of the present amendment, Applicant respectfully submits the present application is in condition for allowance and respectfully requests an early and favorable action to that effect.

Respectfully submitted,

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³ *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970)